

018226



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1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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5266484

D3304-044
Job Sheet 208594



Part No: D3304-044

Job Qty: 1 pcs

Part Name: Tube Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 3/26/20

Job Tracking No:

Due Date: 3/26/20

Created By: Linda Lacelle

Type: SOLD

Description:

Note: DWG D3304 REV.C IPP:D 04.11.26 Revised Steps 7 KJ/JLM IPP REV:D 19.07.23 AS PER DWG REV.C DD
VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Bandsaw - 1	1 pcs			0.00	0.21	Bandsaw - 1		
110	Conventional Lathe - 1 - B4B	1 pcs			0.00	0.65	Conventional Lathe - 1 - B4B		
							Conventional Lathe - 2 - B4B		
120	QC 2	1 pcs			0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		

all checked

N/A

130 QC 8	1 pcs	0.00 0.00	QC 2 - 63	
			QC 2 - 8	
			QC 2 - 66	
			QC 2 - 64	
			QC 2 - 65	
			QC 2 - 5	
			QC 2 - 71	
			QC 2 - 73	
			QC 2 - 69	
			QC 2 - 76	
			QC 2 - 86	
			QC 8 - 12	
			QC 8 - 14	
			QC 8 - 17	
			QC 8 - 20	
			QC 8 - 25	
			QC 8 - 3	
			QC 8 - 32	
			QC 8 - 33	
			QC 8 - 35	
			QC 8 - 39	
			QC 8 - 4	
			QC 8 - 44	
			QC 8 - 45	
			QC 8 - 49	
QC 8 - 58				
QC 8 - 8				
QC 8 - 9				
QC 8 - 68				
QC 8 - 67				
QC 8 - 1 (A)				
QC 8 - 47				
QC 8 - 40				
QC 8 - 52				
QC 8 - 23				
QC 8 - 57				
QC 8 - 76				
QC 8 - 61				
QC 8 - 66				
140 Small Fab - 2 - B4B	1 pcs	0.00 0.50	Small Fab - 1 - B4B	
			Small Fab - 2 - B4B	
			Small Fab - 3 - B4B	
			Small Fab - 4 - B4B	
			Small Fab - 5 - B4B	
			Small Fab - 6 - B4B	
			Small Fab - 7 - B4B	
			Small Fab - 8 - B4B	
			Small Fab - 9 - B4B	
			Small Fab - Various 1 - B4B	
150 QC 5	1 pcs	0.00 0.00	QC 5 - 10	
			QC 5 - 12	
			QC 5 - 17	
			QC 5 - 18	
			QC 5 - 19	
			QC 5 - 22	
			QC 5 - 24	
			QC 5 - 3	
			QC 5 - 43	
			QC 5 - 49	
				Plex 3/26/20 7:48 AM dart.lacelle.linda

MAR 26 2020

			QC 5 - 51		DAS
			QC 5 - 58		58
			QC 5 - 68		9-89
			QC 5 - 9		MA 23
			QC 5 - 50		MA 23
			QC 5 - 30		
			QC 5 - 40		
			QC 5 - 61		
			QC 5 - 81		
160	Large Fab - Welded Assy-2-B4B	1 pcs	0.00 0.56	Large Fab - 1 - B4B	12
				Large Fab - 10 - B4B	
				Large Fab - 2 - B4B	
				Large Fab - 3 - B4B	
				Large Fab - 4 - B4B	
				Large Fab - 5 - B4B	
				Large Fab - 6 - B4B	
				Large Fab - 7 - B4B	
				Large Fab - 8 - B4B	
				Large Fab - 9 - B4B	
				Large Fab - 11 - B4B (Various)	
				Large Fab - 12 - B4B	
170	QC 9	1 pcs	0.00 0.00	QC 9 - 10	
				QC 9 - 18	DAS
				QC 9 - 24	24
				QC 9 - 43	9-89
				QC 9 - 50	
				QC 9 - 9	
180	QC 5	1 pcs	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	DAS
				QC 5 - 24	24
				QC 5 - 3	9-89
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
				QC 5 - 61	
				QC 5 - 81	
190	Powdercoat - 3 Grey Sand - B4B	1 pcs	0.00 0.04	Powdercoat - 1 - B4B	
				Powdercoat - 2 - B4B	
				Powdercoat - 3 - B4B	20-03-27
				Powdercoat - 4 - B4B	
200	QC 3	1 pcs	0.00 0.00	QC 3 - 10	
				QC 3 - 13	
				QC 3 - 15	
				QC 3 - 17	
				QC 3 - 18	
				QC 3 - 2	
				QC 3 - 28	
				QC 3 - 3	

M 138839.

START: 7:30 OUT: 300 FINISH: 8:00

DAS 34 9-89

			QC 3 - 30	
			QC 3 - 34	
			QC 3 - 36	
			QC 3 - 41	
			QC 3 - 51	
			QC 3 - 58	DAS 58 9-89
			QC 3 - 59	
			QC 3 - 68	
			QC 3 - 9	
			QC 3 - 40	
			QC 3 - 19	
			QC 3 - 43	
			QC 3 - 24	
			QC 3 - 61	
			QC 3 - 81	
			QC 3 - 82	
			QC 3 - 87	
210 Small Fab - 3 - B4B	1 pcs	0.00 0.22	Small Fab - 1 - B4B	
			Small Fab - 2 - B4B	
			Small Fab - 3 - B4B	
			Small Fab - 4 - B4B	MAR 27 2020
			Small Fab - 5 - B4B	
			Small Fab - 6 - B4B	
			Small Fab - 7 - B4B	
			Small Fab - 8 - B4B	
			Small Fab - 9 - B4B	
220 QC 5	1 pcs	0.00 0.00	Small Fab - Various 1 - B4B	
			QC 5 - 10	
			QC 5 - 12	
			QC 5 - 17	
			QC 5 - 18	
			QC 5 - 19	
			QC 5 - 22	
			QC 5 - 24	
			QC 5 - 3	
			QC 5 - 43	
			QC 5 - 49	
			QC 5 - 51	DAS 58 9-89
			QC 5 - 58	
			QC 5 - 68	
			QC 5 - 9	
			QC 5 - 50	
			QC 5 - 30	
			QC 5 - 40	
			QC 5 - 61	
			QC 5 - 81	
230 Packaging 3-1 - Stock - B4B	1 pcs	0.00 0.00	Packaging 3 - 1 - B4B	
			Packaging 3 - 2 - B4B	
			Packaging 3 - 3 - B4B	
			Packaging 3 - 4 - B4B	DAS 28 9-89
			Packaging 3 - 5 - B4B	
			Packaging 3 - 6 - B4B	
			Packaging 3 - 7 - B4B	
			Packaging 3 - 8 - B4B	
			Packaging 3 - 9 - B4B	
			Packaging 3 - 10 - B4B	
			Packaging 3 - 11 - B4B	
			Packaging 3 - 12 - B4B	
			Packaging 3 - 13 - B4B	

			Packaging 3 - 14 - B4B	
			Packaging 3 - 15 - B4B	
			Packaging 3 - 16 - B4B	
			Packaging 3 - 17 - B4B	
			Packaging 3 - 18 - B4B	
			Packaging 3 - 19 - B4B	
			Packaging 3 - 20 - B4B	
			Packaging 3 - 21 - B4B	
			Packaging 3 - 22 - B4B	
			Packaging 3 - 23 - B4B	
			Packaging 3 - 24 - B4B	
			Packaging 3 - 25 - B4B	
			Packaging 3 - 26 - B4B	
			Packaging 3 - 27 - B4B	
			Packaging 3 - 28 - B4B	
			Packaging 3 - 29 - B4B	
			Packaging 3 - 30 - B4B	
			Packaging 3 - 31 - B4B	
			Packaging 3 - 32 - B4B	
			Packaging 3 - 33 - B4B	
			Packaging 3 - 34 - B4B	
			Packaging 3 - 35 - B4B	
			Packaging 3 - 36 - B4B	
			Packaging 3 - 37 - B4B	
240 QC 21 - SA	1 pcs	0.00 0.00	QC 21 - SA - 21	<i>DAS 21 3-69</i>
			QC 21 - SA - 70	
			QC 21 - SA - 53	

MAR 27 2020

Part Op 100 - 1- Cut blank: 22.00" as per Dwg D3304
 Descriptions: 110 - 1- Cut blank: 22.00" as per Dwg D3304 2- Turn as per Dwg D3304 3- Deburr
 120 - (QC2- Inspect parts off machine FAI/FAIB)
 130 - QC8- Inspect parts - second check)
 140 - 1- Drill as per Dwg D3304 using drill Jig D3304-T1 2- Form as per Dwg D3304 3- Cut tube to length as per Dwg D3304 4-Check with DT8657 JIG 4- Deburr
 150 - (QC5- Inspect part completeness to step on W/O)
 160 - Weld bracket as per Dwg D3304 and QSI 004
 170 - (QC9- Inspect visual per QSI004- Fusion Welds)
 180 - (QC5- Inspect part completeness to step on W/O)
 190 - (Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3) START TIME: _____ OVEN TEMPERATURE: _____
 FINISH TIME: _____
 200 - QC3- Inspect Part Finish)
 210 - Assemble lanyard and pip pin as per Dwg D3304(SEE NOTE 9) Identify as D3304-044 MANUFACTURE LANDYARD AS PER D2690-10 DWG
 220 - (QC5- Inspect part completeness to step on W/O)
 230 - (Identify as per dwg & Stock Location: _____)
 240 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M304TR0.875W.065	304 Round Tube .875 X .065W	.0100 ft (.01 ea)	100-Bandsaw - 1	
D3304-8	Bracket	1 pcs (1 ea)	160-Large Fab - Welded Assy-2- B4B	
CBL-1240	Cable	1.0416 ft (1.0416 ea)	210-Small Fab - 3 - B4B	
CBL-460	Loop Sleeve	2 Ea (2 ea)	210-Small Fab - 3 - B4B	
NAS1353DS7S13D	Pin, Quick Release	1 Ea (1 ea)	210-Small Fab - 3 - B4B	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Bandsaw - 1	M304TR0.875W.065	0	0	0
160-Large Fab - Welded Assy-2- B4B	D3304-8	1	6	0
210-Small Fab - 3 - B4B	CBL-1240	1	285	0
	CBL-460	2	302	0
	NAS1353DS7S13D	1	294	0

Part Specifications
Specifications could not be found.

Plex 3/26/20 7:48 AM dart.lacelle.linda



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D3304-044
Job Sheet 163782



Part No: D3304-044

Job Qty: 2 ea

Part Name: Tube Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV B IPP: D 04.11.26 Revised Steps 7 KJ/JLM

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D3304-044 Tube Assembly	DWG REV B IPP: D 04.11.26 Revised Steps 7 KJ/JLM		0.000	
BLBS-0016 Pip Pin			0.000	
CBL-1240 Cable			0.000	
CBL-460 Loop Sleeve			0.000	
D3304-8 Bracket	DWG REV B IPP A 04.09.07 New issue KJ/JLM IPP B 08.08.06 waterjet EC verified by: DD		0.000	
M304TR0.875W.065 304 Round Tube .875 X .065W			0.000	

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	2 Ea	10/30/17	0.00	0.00	Start up container	
140	Small Fab	2 pcs	10/30/17	0.00	1.12	Small Fab	
150	QC	2 pcs	10/30/17	0.00	0.00	QC5	
160	Large Fab	2 pcs	10/30/17	0.00	1.12	Large Fab 1	
170	QC	2 pcs	10/30/17	0.00	0.00	QC9	
180	QC	2 pcs	10/30/17	0.00	0.00	QC5	
190	Powdercoat	2 pcs	10/30/17	0.00	0.08	Powdercoat3	
200	QC	2 pcs	10/30/17	0.00	0.00	QC3	
210	Small Fab	2 pcs	10/31/17	0.00	1.12	Small Fab	
220	QC	2 pcs	10/31/17	0.00	0.00	QC5	
230	Packaging	2 pcs	10/31/17	0.00	0.00	Packaging3	
240	QC21-SA	2 Ea	10/31/17	0.00	0.00	QC21	

Job BOM

Part / Item	Component Name	Quantity	Operation
D3304-044 B163782		4 Ea (2 ea)	90-Start up Op
CBL-1240	Cable	2.0832 ft (1.0416 ea)	90-Start up Op
BLBS-0016	Pip Pin	2 pcs (1 ea)	210-Small Fab
CBL-460	Loop Sleeve	4 Ea (2 ea)	210-Small Fab
D3304-8	Bracket	2 Ea (1 ea)	210-Small Fab

Status: Stock

Part: **D3304-044 B163782**

Created: 9/30/17 12:11 PM DART.MICHAUD-
FEBRILLE.VICTORIA



Serial No: **S000091**

Printed By: Goldston, Justin 10/2/17 10:45 AM

Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	CBL-1240	2	0	0	0
	D3304-044 B163782	4	2	0	0
210-Small Fab	BLBS-0016	2	0	0	0
	CBL-460	4	0	0	0
	D3304-8	2	0	0	0
Part Specifications					
Specifications could not be found.					

Plex 10/1/17 3:16 PM Dart.Baker.Diane

Work Order Summary

Thursday, September 28, 2017 8:07:18 AM

Page 1 of 1

Criteria : Work Order ID: 163782 Item ID: D3304-044 Product Family SMALL FAB
 Work Order Start Dates 7/19/2017 to 7/19/2017 11:59:59 PM Work Order Required Dates 7/28/2017 to 7/28/2017 11:59:59 PM
 All References
 Work Order Status Released

Work Order ID 163782 Required Qty 2.0000 Status Code Released
 Item ID D3304-044 Accepted Qty 0.0000 Scrap Qty 0.0000
 Item Name Tube Assembly
 Current Acct Value \$281.809

Start Date	7/19/2017	Required Date	7/28/2017	Completed Date	
Standard	** Actual **		** Acct. Value **	** Variance **	** Variance % **
Direct Costs	Total	Each	Each	Each	Each
Material	\$15.499	\$0.000	\$40.038	\$40.038	100.00%
Labor	\$19.176	\$0.000	\$66.797	\$66.797	100.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$55.947	\$0.000	\$174.974	\$174.974	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$90.622	\$0.000	\$281.809	\$281.809	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
M304TR0.875W.065					
304 round tube .875 x .065w					
	3.9036		8/8/2017	3.6930	\$15.499
Total Matl Amts:					\$15.499

Work Center Bandsaw

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
char03		8/8/2017										
100			0.00	0.00	0.16	0.16	1.00	\$0.000	\$3.091	\$9.017	\$0.000	\$12.108
Total:			0.00	0.00	0.16	0.16	1.00	\$0.000	\$3.091	\$9.017	\$0.000	\$12.108

Work Center Lathe Conv

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
char03		8/8/2017										
110			0.00	0.00	0.86	0.86	1.00	\$0.000	\$16.085	\$46.930	\$0.000	\$63.015
Total:			0.00	0.00	0.86	0.86	1.00	\$0.000	\$16.085	\$46.930	\$0.000	\$63.015

Page 1

Quality Control

17-08-08

17-08: 08

17-08-05

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																				
OTHER :																									

163782

Monday, July 10, 2017 11:50:51 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/19/2017 **Start Qty:** 2.00 ***2***

Cust Item ID:

Required Date: 7/28/2017 Req'd Qty: 2.00 *~*

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130 QC8- Inspect parts - second check

0.00

130

QC

Memo

0.04

Quality Control

140

0.00

140

Small Fab

Small Fab

Memo

0.97

Small Fab

1- Drill as per Dwg D3304 using drill Jig D3304-T12- Form as per Dwg D33043- Cut tube to length as per Dwg D33044-Check with DT8657
JIG4- Deburr

150

QC5- Inspect part completeness to step on W/O

0.00

150

QC

Memo

0.04

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
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							QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

163782

Monday, July 10, 2017 11:50:51 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 7/19/2017 **Start Qty:** 2.00 ***2***

Required Date: 7/28/2017 Req'd Qty: 2.00 *2*

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
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OTHER :																									

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

163782

Monday, July 10, 2017 11:50:51 AM

N900040100

Setup Start *NS1*

NS1

Stop *NS2*

2

Customer:

2

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

QC5- Inspect part completeness to step on W/O

220

QC

Memo

Quality Control

230	Identify as per dwg & Stock Location:_____	0.00
-----	--	------

230

Packaging

Memo

Packaging

240	QC21- Final Inspection - Work Order Release	0.00
-----	---	------

240

QC

Memo

Quality Control

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Page 1

Monday, July 10, 2017 11:50:49 AM

Work Order ID: 163782

163782

Parent Item: D3304-044

D3304-044

Parent Item Name: Tube Assembly

Start Date: 7/19/2017

Required Date: 7/28/2017

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP: D 04.11.26 Revised Steps 7 KJ/JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

CBL-1240		Purchased	No			100	f	282.9847	1.0416	2.0832			
----------	--	-----------	----	--	--	-----	---	----------	--------	--------	--	--	--

CBL-1240

Cable

**

Location

Loc Qty

Loc Code

GA

282.9847488

m136491

47.6052488

m136852

35.3795

m137684

200

M304TR0.875W.065

Purchased

No

160

f

22.5930

1.8542

3.903579

M304TR0 875W 065

304 round tube .875 x .065w

**

18-08-08

DAS
32
9-89

Location

Loc Qty

Loc Code

MAT038

22.593

m131717

9.989

m137286

12.604

3.6931

BLBS-0016

Purchased

No

210

Each

13.0000

1

2

RI RS-0016

PIP PIN

**

Location

Loc Qty

Loc Code

ST557

13

145509

2

m137339

4

m137557

3

m137753

4

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
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Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																				
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

Picklist Print

Page 2

Monday, July 10, 2017 11:50:49 AM

Work Order ID: 163782

163782

Parent Item: D3304-044

D3304-044

Parent Item Name: Tube Assembly

Start Date: 7/19/2017

Required Date: 7/28/2017

Start Qty: 2.00

Required Qty: 2.00

CBL-460

Purchased

No

210

Each

224.0000

2

4

CBL-460******

Loop Sleeve

LocationLoc QtyLoc Code

GA

224

m136852

10

m137339

114

m137941

100

D3304-8

Manufactured

No

210

Each

16.0000

1

2

D3304-8******

Bracket

LocationLoc QtyLoc Code

WA002

16

104629

16

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

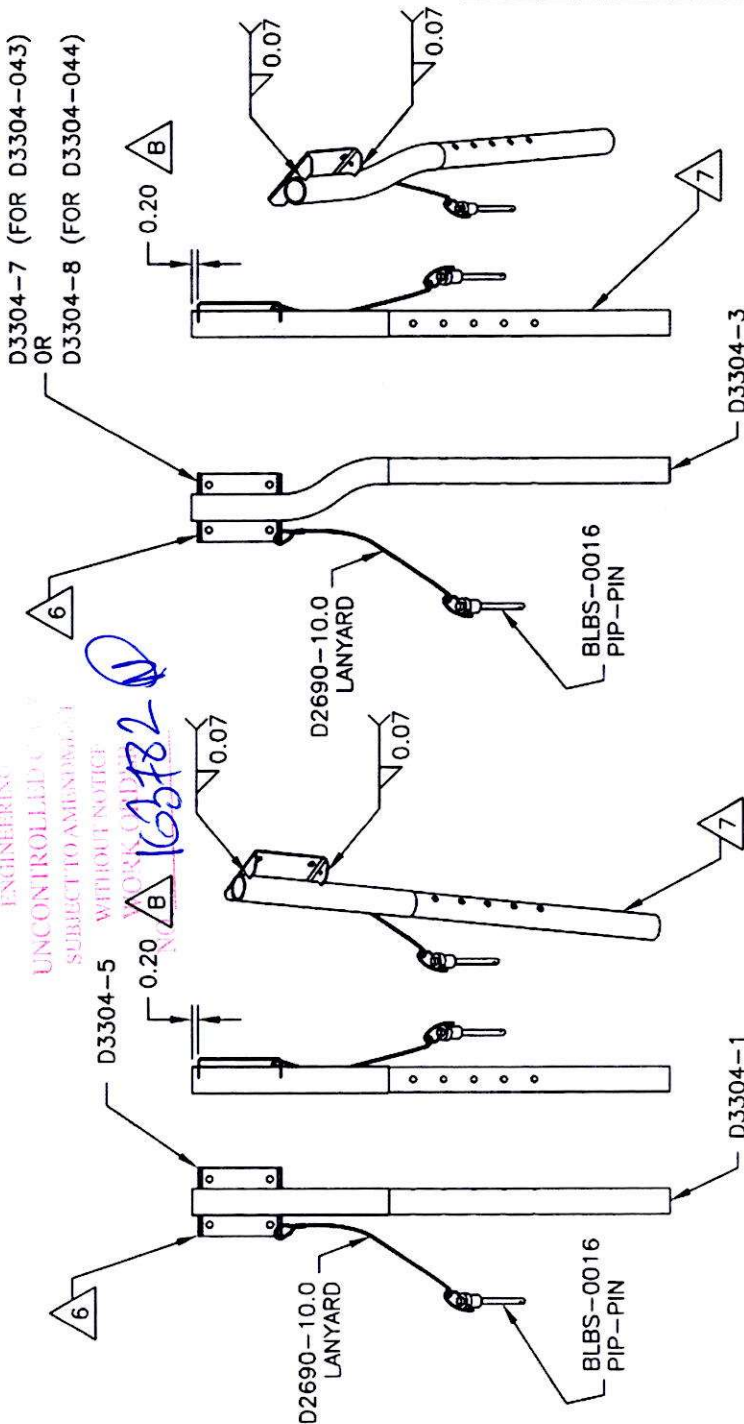
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval			
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____									
Misidentified ☐	Past Due ☐										

DART

DESIGN RF		DRAWN BY RF		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 		APPROVED 		DRAWING NO. REV. B D3304 SHEET 1 OF 4	
DATE 05.07.15			TITLE SCALE TUBE ASSEMBLY 1:6		
A	04.08.18		NEW ISSUE		
B	05.07.15		UPDATE DIMENSIONS; ADD D3304-7/-8		



D3304-044 TUBE ASSEMBLY (SHOWN)
D3304-043 OPPOSITE

D3304-04.1 TUBE ASSEMBLY

RELEASED
25-08-11

D3304-041/-043/-044 NOTES:

- 1) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 2) WELD PER DART QSI 004
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) IDENTIFY AS INDICATED USING FINE POINT PERMANENT INK MARKER "TCCA-PDA
AEROSPACE LTD, P/N D3304-XXX B/N BXXXX, FOR PRODUCT ELIGIBILITY SEE P
PERMANENT INK MARKER: "TCCA-PDA, DART AEROSPACE LTD, P/N D412-724-
BXXXX, FOR PRODUCT ELIGIBILITY SEE PDA04-11"
- 7) IF BEING ASSEMBLED WITH D3303-041, ADD THE FOLLOWING USING A FINE P

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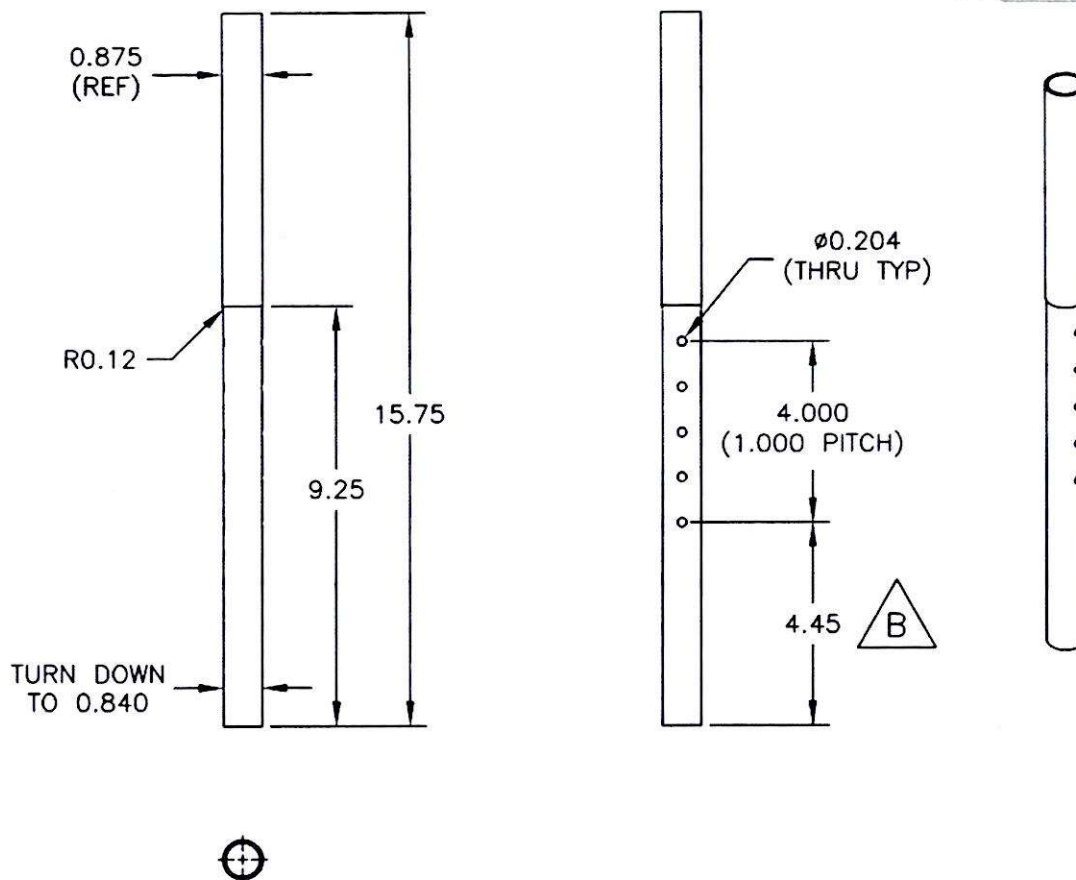
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JUL 11 2017



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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3304	REV. B SHEET 2 OF 4
DATE 05.07.15		TITLE TUBE ASSEMBLY	SCALE 1:4

RELEASED
05.08.11 *[Signature]*



D3304-1 TUBE

D3304-1 NOTES:

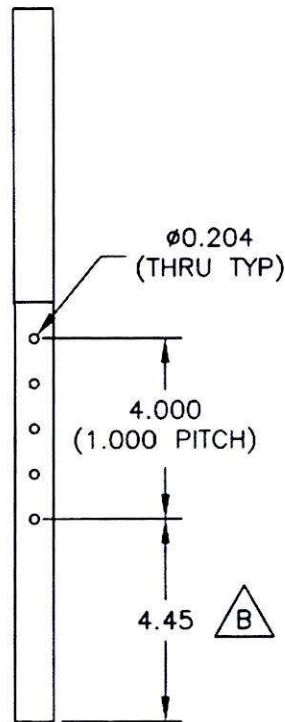
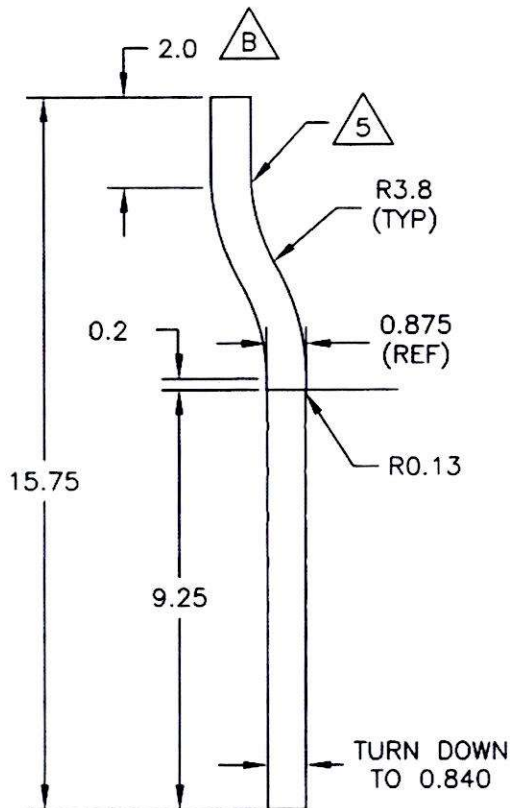
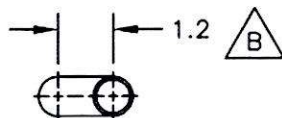
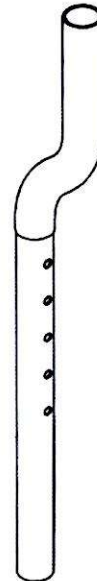
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE $\phi 0.875 \times 0.065$ WALL
(REF. DART SPEC M304TR0.875W.065) ENSURE SEAMLESS TUBE IS USED
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015

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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3304	REV. B SHEET 3 OF 4
DATE 05.07.15		TITLE TUBE ASSEMBLY	SCALE 1:4

RELEASED
05-08-11 *[Signature]***D3304-3 TUBE****D3304-3 NOTES:**

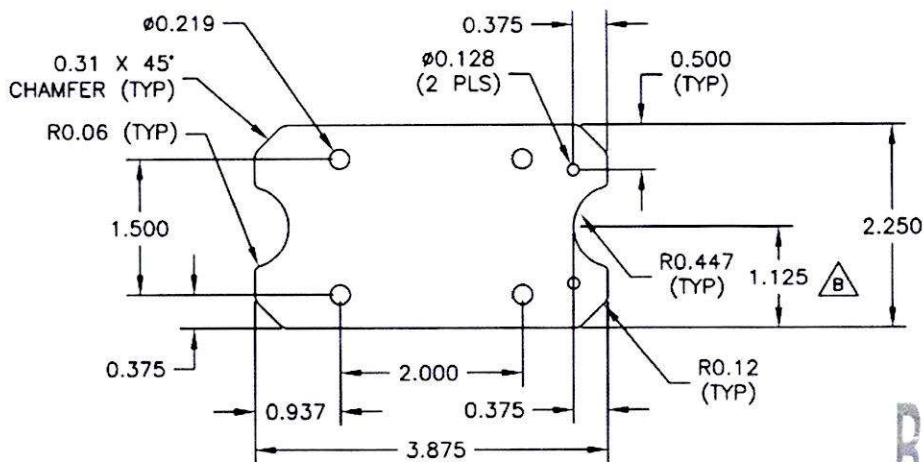
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE $\phi 0.875 \times 0.065$ WALL (REF. DART SPEC M304TR0.875W.065) ENSURE SEAMLESS TUBE IS USED
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) BEND LINES 9.625, 13.375 DIMENSIONS

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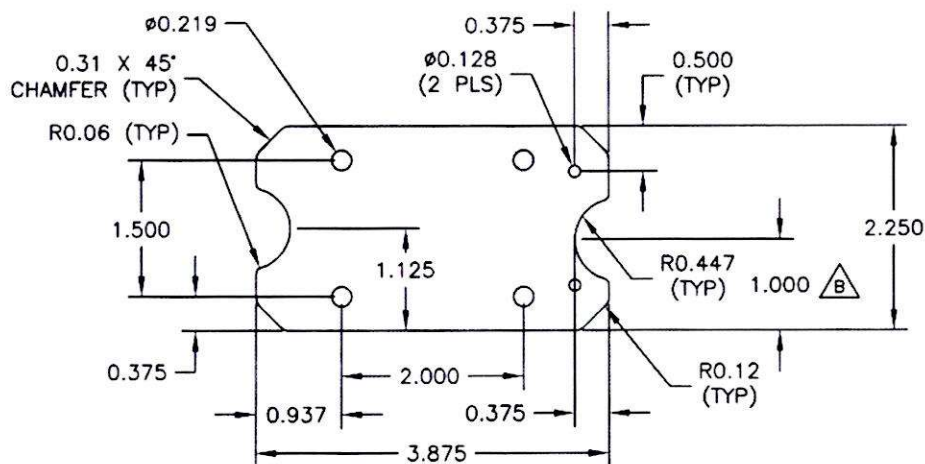


DESIGN RF	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D3304	REV. B SHEET 4 OF 4
DATE 05.07.15	TITLE TUBE ASSEMBLY		SCALE 1:2

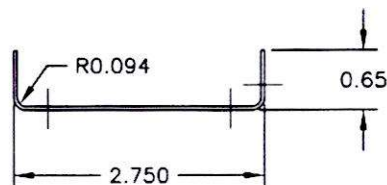


D3304-5 FLAT PATTERN

RELEASED
05.08.11



D3304-7/-8 FLAT PATTERN



**D3304-5/-7 BRACKET
D3304-8 OPPOSITE**

NOTES:

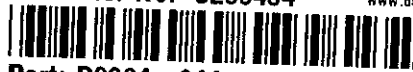
- 1) MATERIAL: AISI 304/316 SS 0.040 THICK SHEET (REF. DART SPEC M304S20GA)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015

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Container No: S266484



Part: D3304-044

Job No: 208594

Serial No/Batch: S266484

Revision: C

Inspector:

Exp Date:

Instructions: Various STC's

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Date: 03/26/20